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Incorporation of Digital Tools In Teacher Training Programs in Mirpur AJ&K

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ABSTRACT

Digital tools in teacher training programs enhance instructional effectiveness by providing interactive and flexible learning environments. They support the development of modern teaching skills, fostering greater engagement and adaptability in educators. The study investigates the perceptions of prospective teachers about the digital tools in their teacher training program. Also, analysis the how teachers incorporate the digital tools in teacher training programs in Mirpur AJ&K. The study design was quantitative, descriptive survey research method was used. The participants of the study were all the prospective teachers in Mirpur AJ&K. The population of the study selected 1053 prospective teachers in Mirpur AJ&K. To accomplish the goals of the study, the sample was 611 prospective teachers in Mirpur AJ&K, that are 60% of its population. The pilot testing was conduct to check the validity and trustworthiness of the survey. The data was collected through survey with the response rate of 67.89%. Self-designed questionnaire was used as a tool based on five-point Liker Scale i.e. Never, Rarely, Sometimes, Always, And Often. The collected data was analyzed by using SPSS. Results of the study show that there are notable differences in how digital technologies are used for theoretical teaching in teacher training program. It enhances teaching skills by familiarizing educators with current educational technologies. Additionally, it provides elasticity, letting teachers to learn at their own pace and convenience. The recommendation of the study is teachers' trainers may encourage to their prospective teachers towards the usage of digital tools.

Keywords: *Digital tools, Teacher training programs.*

INTRODUCTION

Digital tools refer to software, online platforms, applications, or electronic devices used to facilitate various tasks, such as learning, teaching, communication, content creation, and collaboration. They include tools like video conferencing platforms (e.g., Zoom), collaborative document editors (e.g., Google Docs), interactive learning tools (Quizizz), and LMS (e.g., Moodle). These tools are increasingly used in education to enhance teaching methods, promote student engagement, and improve the accessibility of resources.AI-Emran (2023) For instance, the social network is a flexible learning environment that facilitates the two types of learning.

Teacher education, also known as teacher training, involves applications policies, procedures, and resources aimed at providing (prospective) experts who possess the information, convictions, conduct,

methods, approaches, and abilities needed to carry out their responsibilities in the community, school, and classroom. Koellner & Greenblatt (2018) assert that teacher training can be a successful means of transferring information, abilities, and motivation to educators.

DIGITAL TOOLS IN TEACHER TRAINING PROGRAMS

Using digital resources in teacher preparation programs enhances all three main aspects of teacher training: research purpose, theoretical teaching, and teaching practice. Below is a detailed explanation of how digital tools contributing to each aspect:

1. **Research Purpose:** Digital tools provide innovative ways to facilitate and enhance research processes within teacher training. Digital libraries, online journals, and databases give teachers-in-training access to a vast amount of current research, studies, and teaching methodologies from around the world Tools such as SPSS and Excel allow teachers to analyze educational research data efficiently. Research conducted by Brown (2021) shows that using Google Forms can reduce the time needed for assessment by up to 50%,
2. **Theoretical Teaching:** According to Henrick (2018),Digital tools transform theoretical teaching by making it more interactive, engaging, and accessible. Tools like Learning Management Systems (LMS) (e.g., Moodle, a cloud-based LMS, is ranked among the top 20 LMSs. Google Classroom) and video conferencing platforms (e.g., Zoom, Microsoft Teams) allow seamless content delivery.
3. **Teaching Practice:** Teaching practice is where the integration of digital tools becomes particularly transformative, bridging the gap between theory and real-world application. According to Bawanti & Arifani, (2021) One of Zoom's advantages is the use of technology that can cross space and period while remaining easier in the learning process. Trainee teachers can conduct practice lessons using platforms like Google Meet or Zoom, gaining confidence before facing real classrooms. a virtual meeting tool that works via anyplace in a broadband connection John, (2020).

STATEMENT OF THE PROBLEM

Teacher training programs in Mirpur, AJ&K, lack effective integration of digital tools, a critical component of modern education. This gap delays the development of digitally proficient educators, undermining their ability to implement innovative teaching practices and contribute to educational research. The problem is made worse by the lack of reliable recommendations for integrating digital tools, which results from little research in this field. This research aims to tackle these challenges by assessing the current level of digital tool integration, identifying barriers, and proposing evidence-based solutions to enhance digital literacy among educators.

RESEARCH OBJECTIVES

1. To find the use of digital tools for research purposes, theoretical teaching and teaching practice in prospective teacher training programs in Mirpur AJ&K.
2. To compare the use of digital tools in prospective teacher training programs at universities and Affiliated colleges.

RESEARCH QUESTIONS

1. What is the use of digital tools for research purposes, theoretical teaching and teaching practice in prospective teacher training programs

RESEARCH HYPOTHESES

1. H0: There is no significant difference between the use of digital tools in prospective teacher training programs at universities campuses and Affiliated colleges in Mirpur AJ&K.

Sub Hypotheses

i. H01: There is no significant difference between the use of digital tools for research purposes in prospective teacher training programs at universities campuses and Affiliated colleges in Mirpur AJ&K.
ii. H02: There is no significant difference between the use of digital tools for theoretical teaching in prospective teacher training programs at universities campuses and Affiliated colleges in Mirpur AJ&K.
iii. H03: There is no significant difference between the use of digital tools for teaching practices in prospective teacher training programs at universities campuses and Affiliated colleges in Mirpur AJ&K.

SIGNIFICANCE OF THE STUDY

This study valuable for:

This study will be significance for teacher trainers to use technology effectively in the classroom. It helps teacher trainers to enhance their skills in using technology for effective teaching. This study will be significance for prospective teachers to enhance their learning experiences by providing interactive, engaging, and effective learning opportunities, promoting collaboration and inclusivity. This study will be significance for future researchers to providing them with access to an extensive of resources and research materials. These tools enable efficient data collection, analysis, and collaboration, making the research process more streamlined and effective.

DELIMITATION

This study is delimited to the prospective teachers of affiliated colleges and Universities of Mirpur Division.

LITERATURE REVIEW

According to Bond, M, Marin (2020), digital tools are any electronic devices or online resources that support processes such as teaching, data analysis, learning, collaboration, and assessment. These tools are integral in education, business, and communication to foster productivity and efficiency. According to Henrick (2018), Nowadays, Moodle, the top open-source learning management system worldwide. Chives C, (2021) stated that Canvas by Incorporate has established its credibility as a market leader thanks to its mobility, user-friendly interface, and complete tool set, which adapt to the different needs of current educational contexts. The digital transformation presents major problems for educational systems worldwide (European Commission, 2020). According to the Organization for Economic Co-operation and Development (OECD, 2019), digital transformation is the process of integrating digital technology into various aspects of an organization or society to drastically change how it operates, adds value, and interacts with stakeholders. According to García-Morales, (2021) Over the first two decades of the twenty-first century, the use of different kinds of technology in courses of study steadily gained traction, but the present COVID-19 epidemic has significantly accelerated this process. According to Roxi Thompson (2024), In the classroom, encouraging student collaboration can boost participation and encourage the use of more complex thinking techniques. However, it's crucial that educators assist students in acquiring the skills necessary for productive teamwork, which includes knowing how to use digital technologies for collaboration.

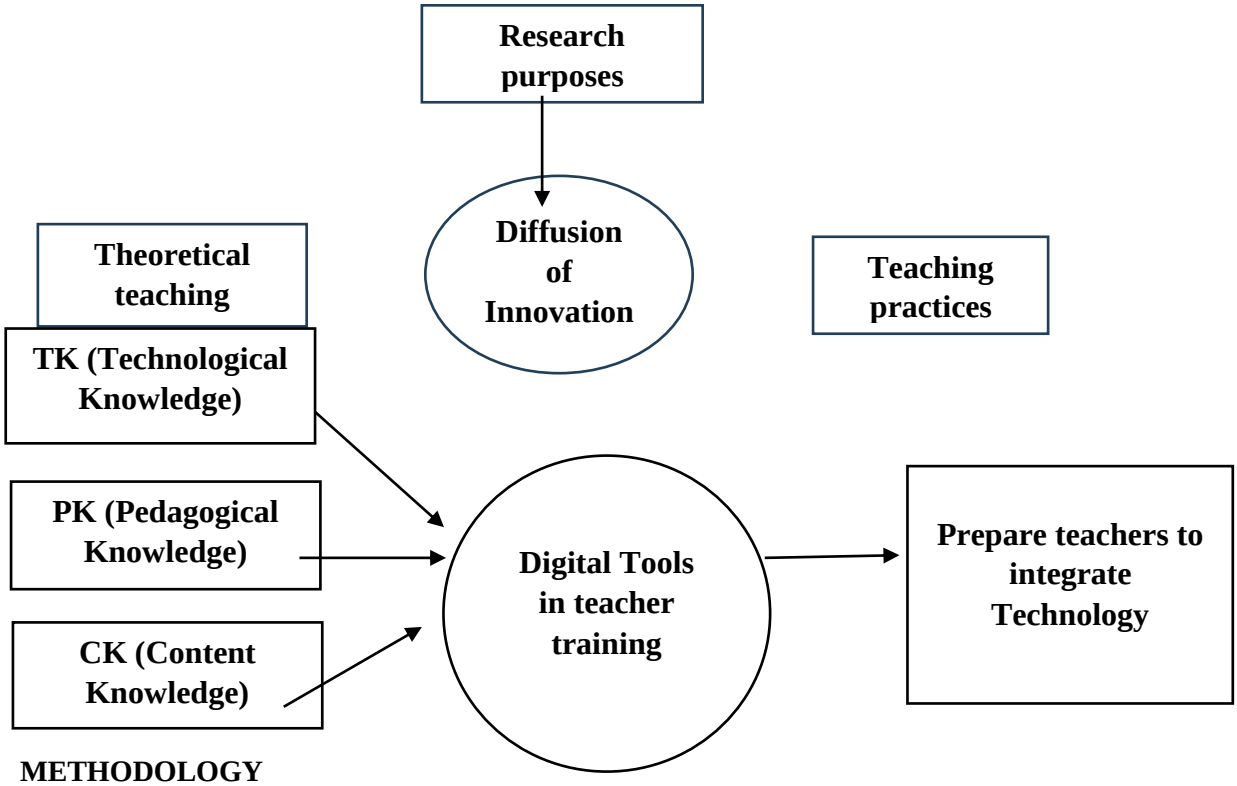
THEORETICAL FRAMEWORK

According to Everett Rogers' 1962 Diffusion of Innovation (DOI) Theory, new concepts, methods, or technology gradually proliferate within a social system. It offers a framework for comprehending how innovations are adopted and the variables that affect whether and how quickly people or groups accept them. A person is said to have adopted a new behavior when they do something that they have never done before, such as buying or utilizing a new product or learning and exhibiting a new behavior. To examine and encourage the acceptance of innovations, the theory is widely applied in a variety of domains, such as communication, business, healthcare, and education. By applying the DOI theory to the three aspects of teacher training programs, institutions can develop a holistic strategy for integrating digital tools. This approach involves:

- Conducting research to identify effective tools and address barriers to adoption.
- Enhancing theoretical teaching through interactive and accessible digital platforms.
- Supporting teaching practice with hands-on training and mentorship.

Digital tools can enhance teacher training programs by supporting three main aspects: research purposes, theoretical teaching, and teaching practice. The TPACK model provides a structured approach to integrating these tools into teacher training while ensuring a balance between technological, pedagogical, and content knowledge.

CONCEPTUAL FRAMEWORK



METHODOLOGY

The present study was quantitative in nature. The usage of digital tools in teacher training programs was examined using a descriptive study approach. The purpose of the research was to determine the incorporation of digital tools in teacher training programs in Mirpur AJ&K. For the present study all the prospective teachers of universities and affiliated colleges in Mirpur, Azad Jammu and Kashmir (AJ&K) were the

population of the study. The teacher's roster was obtained from the office of chairpersons of education department of MUST and Kotli University and principal office of Education college. The sampleconsist of universities and colleges teachers from MUST and KOTLI university and affiliated colleges in Mirpur, AJK. Data collection process was followed by filling a close ended self-designed questionnaire containing three sections, 1st section contained 05 statements based on questions regarding Research purposes, 2nd section contained 09 statements based on questions regarding Theoretical teaching, and 3rd section contained 08 statement consist of questions regarding teaching practice. The researcher used stratified sampling to select participants who have experience or expertise in using these tools. Through stratified sampling technique 900 questionnaires were circulated and got 611 responses, with the response rate of 67.89% from all three institutes and for those prior permissions were taken from chairperson office of both universities and principal office of affiliated colleges.Researcher designed a survey for prospective teachers in universities and colleges using a Likert scale with five points. To obtain the final results data was entered into SPSS.To analyze the tendency of responses, mean scores & Standard Deviation were tabulated.

Validity AND RELIABILITY

For the validation of the questionnaire, Feedback from the supervisor, peers and experts served as validity testing, specifically questionnaire was reviewed by two experts of the Mirpur University of Science and Technology MUST,

1. Dr. Razia Rizve (Assistant Professor)
2. Ms. Kiran Saleem (Lecturer Education) Department of Education and the refinements were used to enhance the instruments' effectiveness before full-scale data collection.

For reliability, the questionnaire was circulated to 30 randomly selected participants. Reponses were later entered into SPSS to check the reliability of the questionnaire. The Cronbach's alpha of 30 sample size was tested and it was found that alpha value was .769 and therefore, the measures were found that all the statements were highly reliable.

Results and Discussions

This study searched to find out the incorporation of digital tools in teacher training programs in Mirpur AJ&K.

Table 01: Mean and stranded Deviation,The use of digital tools for research purposes

Statements	Mean	Std. Deviation
I use online Google Forms to collect data for my research in teacher training?	3.1047	1.14039
I use SPSS, Excel for analyzing research data.	2.8347	1.13679
I use Zoom to conduct interviews or focus groups for research purposes?	2.6498	1.31264
I use Microsoft Teams to work with colleagues on research projects?	3.467	0.92248
I use SurveyMonkey to collect feedback from participants in my research studies?	3.0951	1.07859

Table 02. Mean and stranded Deviation, The use of digital tools for research purposes.

Statements	Mean	Std. Deviation
I use PowerPoint to create theoretical lesson content?	3.4681	0.95482
I use Canvas to deliver theoretical lessons?	3.3388	1.07648
I incorporate YouTube video lectures into my theoretical teaching?	3.3241	1.06343
I use Jam board during theoretical teaching?	3.1391	1.13019
I use e-books, research articles available online in my theoretical teaching?	3.1964	1.02144
I use Google Forms to evaluate students understanding of theoretical concepts?	3.3912	0.97132
I use Google Meet for live theoretical teaching sessions?	3.2721	1.08037
I use Quizzes, Socrative to engage students in theoretical learning activities?	3.4337	0.99017
I use Facebook, Twitter for sharing theoretical content with my students?	3.6667	0.91135

Table 03:Mean and stranded Deviation,The use of digital tools for research purposes

Statements	Mean	Std. Deviation
I use Moodle to upload teaching practice materials?	2.9803	0.8764
I use Flip-grid to record my teaching practice sessions for feedback?	3.2029	0.97075
I use Zoom to conduct virtual teaching practice sessions?	3.126	1.17019
I use Kahoot for formative assessments during teaching practice?	3.1571	1.12564
I use Google Classroom for managing class assignments with students?	3.419	0.94846
I use Google Drive for sharing teaching resources and collaborating with students?	3.4614	0.97446
I use Gram-marly to access quality of students written assignments?	2.6967	1.26133
I use Canva for graphic design tools to create engaging teaching materials?	3.5646	0.97096

Table 04: Comparison 01 Universities and Colleges V1: Use of Digital tools for Research Purposes

Type		N	Mean	Std. Deviation	Std. Error Mean
University	research purpose	364	13.9896	2.613	0.13696

Affiliated	247	14	2.57552	0.16388

Group Statistics

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
research purpose	Equal variances assumed	1.012	0.315	-0.994	609	0.321	-0.21287	0.21416	-0.63346	0.20772
	Equal variances not assumed			-0.997	533.331	0.319	-0.21287	0.21357	-0.63242	0.20668

The results indicate that educational institutions teachers have a slightly lower mean score of 13.9896, In contrast, teachers from affiliated institutions have a slightly higher mean score of 14, indicating that their responses are slightly more consistent.

The p-value (0.315) from Leaven's Test for Equality of Variances exceeds the standard alpha level of 0.05, indicating that there is no statistically significant difference in the variances between the two groups. Regardless of whether identical variances are assumed, the p-values (0.321 and 0.319) are considerably over 0.05, suggesting that the two groups' mean scores do not differ in a way that is statistically significant.

Table 05: Comparison 01: Universities and colleges V2: Use of Digital tools for Theoretical teaching.

Group Statistics

	Type	N	Mean	Std. Deviation	Std. Error Mean
Theoretical teaching	University	364	28.7549	3.71125	0.19452
	Affiliated	247	27.812	4.49908	0.28627

Independent Samples Test

	Leaven's Test for Equality of Variances	t-test for Equality of Means

		F	Sig.	t	Df	Sig. (2-tailed)		Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Theoretical teaching	Equal variances assumed	12.55	0	2.826	609	0.005	0.94292	0.3337	0.28757	1.59827
	Equal variances not assumed			2.724	459.264	0.007	0.94292	0.34611	0.26277	1.62307

The findings show that university professors have a somewhat higher mean score of 28.7549, In comparison, professors from linked institutions have a somewhat lower mean score of 27.812, indicating that their replies are more variable.

The p-value (0.000) from Leaven's Test for Equality of There is less variances than the standard alpha threshold of 0.05, showing that the variances between the two groups differ considerably. Both p-values (0.005 and 0.007) are less than 0.05, which means that the mean scores of the two groups differ statistically significantly.

Table 06: Comparison 01: Universities and Colleges V3: Use of Digital tools for teaching practices.

Group Statistics

	Type	N	Mean	Std. Deviation	Std.Error Mean
teaching practice	University	364	24.0886	3.72528	0.19526
	Affiliated	247	23.6012	4.02938	0.25638

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
teaching practice	Equal variances assumed	2.139	0.144	1.535	609	0.125	0.48738	0.31747	-0.13608	1.11084
	Equal variances not assumed			1.512	500.108	0.131	0.48738	0.32227	-0.14579	1.12055

The findings show that university professor have a slightly higher mean score of 24.0886, In a contrast, professors from linked institutions have a more modest mean score of 23.6012, indicating that their replies are more variable.

The p-value (0.144) from Leaven's Test for Equality of Variances is higher than the usual alpha threshold of 0.05, suggesting that there is no significant difference in the variances between the two groups. The two groups' mean scores do not appear to differ statistically significantly, as indicated by the p-values (0.125 and 0.131), which are both above 0.05.

DISCUSSIONS OF FINDINGS

The study conducted in Mirpur, Azad Jammu and Kashmir, aimed to explore the incorporation of digital tools in teacher training programs. The research focused on three main objectives: identifying the use of digital tools for research purposes, investigating their incorporation into theoretical teaching, and examining their role in teaching practices. First, the research highlighted a widespread acknowledgment of the benefits of digital tools in enhancing research capabilities within teacher training programs. Across universities and affiliated colleges, demonstrated a uniform engagement with these tools, indicating a strong foundation of digital literacy and access to digital resources. The second objective of the study focused on the incorporation of digital tools in theoretical teaching. The findings indicate strong support from teachers for integrating digital tools into training programs, with many expressing comfort and confidence in their ability to use these tools effectively. While no significant gender-based differences were observed. Lastly, the study examined the incorporation of digital tools in teaching practices within teacher training programs. The findings suggest a generally consistent adoption of digital tools across different groups, with educators demonstrating familiarity and interest in further exploring the potential of these tools for educational purposes. Overall, the study's findings highlight the growing recognition and adoption of digital tools in teacher training programs.

CONCLUSION

On basis of null hypotheses 01

The null hypotheses 01 focuses on the use of digital tools in teacher training programs in universities campuses and affiliated colleges of Mirpur AJ&K, focusing on three aspects: research purposes, theoretical teaching, and teaching practices.

The findings indicate that:

H01.1 is accepted, as there is no significant difference in the use of digital tools for research purposes in teacher training programs between universities and affiliated colleges.

H01.2 is rejected, as there is a significant difference in the use of digital tools for theoretical teaching in teacher training programs between universities and affiliated colleges.

H01.3 is accepted, as there is no significant difference in the use of digital tools for teaching practices in teacher training programs between universities and affiliated colleges.

RECOMMENDATIONS

Based on the study results the study recommends,

1. Teacher trainers should incorporate SPSS and Excel into prospective teacher training programs."
2. Teacher trainers should guide prospective teachers in incorporating e-books and online articles into their lesson plans and teaching strategies.
3. Prospective teachers should use Gram-marly to assess the quality of students' written assignments.

4. Educational institutes may encourage and facilitate the regular use of digital tools in classroom lessons through workshops, peer demonstrations, and support systems.
5. Policy makers may focus on teacher training programs and digital resources that directly align with enhancing educational outcomes, supporting teachers' strong belief in their value.
6. Teachers' trainers may have regular training and support to stay updated on new technology.
7. Teacher trainers may provide hands-on practice opportunities and mentorship to ensure that prospective teachers feel at ease with digital tools.

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